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P.O.# 552-870026
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Qty	Item Description

Artis Q ceiling Interv. Rad.

Artis Q ceiling for interventional radiology

The Artis Q product line is setting new standards in interventional imaging.

The Artis Q ceiling for interventional radiology now features PURE(r).

PURE adds smooth interaction to Siemens' smart technologies. It is designed to boost productivity and enhance outcomes for certain clinical applications while increasing image quality and reducing dose.

The GIGALIX X-ray tube concentrates high pulse power on small, square-shaped focal spots (flat emitter technology for all focal spots). This provides unprecedented image quality for confidence in challenging situations.

The ceiling-mounted C-arm offers highly flexible positioning. The motorized rotation of the C-arm from a head-end position to a lateral position allows for free head access and full patient coverage without rotating the table.

The patient table is fitted with a freely movable patient positioning tabletop.

The as4OHDR flat detector is optimized for the requirements of radiology.

Digital acquisition technology and digital subtraction angiography with up to 7.5 f/s in 1k112 bit matrix are available.

The complete CARE+CLEAR package offers optimal image quality at the lowest reasonable dose.

Live and reference images are displayed on two 19" flat screens in the exam room. In the control room live images are displayed on a third screen.

1   **Automap**

Automatic stand positioning depending on the selected reference image and automatic reference image selection depending on the stand positioning.

1   **4P wireless footswitch inst. of cbl**

Wireless footswitch connection

Qty	Item Description
	Note: Wireless replaces the wired connection.
1	**Mem. enhncmnt. 3 (50k - 1k Matrix)**
	Memory capacity extended by 25,000 images, from 25,000 images to 50,000 images in 1k matrix.
1	**Laser crosshairs**
	Laser crosshairs integrated in the cover of the flat detector and tableside operation for easier, quicker and dose-saving positioning of the patient (with biplane systems only plane A).
1	**Fluoro Loop**
	Storage and review of dynamic fluoroscopic sequences (Fluoro Loop). This saves an additional acquisition and reduces dose. The maximum storable fluoroscopic time depends on the selected pulse rate, e.g. 34 s at 30 p/s, 68 s at 15 pis.
1	**2K acquisition**
	Acquisition and storage of single images and series with a resolution of up to 4.76 megapixels (2480 x 1920) at up to 7.5 fis.
	The 2k acquisition is valid for DR, DSA, 3D acquisitions and PERIVISION, and affects full format, Zoom 1, and Zoom 2.
1	**PERISTEPPING / PERIVISION**
	Motorized stepping for real-time bolus chasing.
	Gantry stepping with zeego and ceiling mounted systems, table stepping with floor mounted and biplane systems.
	Peripheral digital angiography with stepping and online subtraction display.
1	**DYNAVISION DSA/DR**
	Native or subtracted digital rotational angiography with angle triggering.
1	**Vascular analysis**
	Vessel analysis with determination of degree of stenosis, distance measurement and calibration.
1	**syngo interv. Onco. Engine Pro as40**
	A workstation for reconstruction, post-processing and handling of 3D information including specific applications for interventional oncology. The package includes the following functionalities: 3D high-contrast and CT-like soft-tissue imaging (syngo DynaCT), 3D functional imaging providing physiologic blood volume information (syngo DynaPBV Body), 3D roadmap for dynamic overlay of planning data and 3D volumes on live fluoroscopy, 3D/3D fusion functionality for integration of pre-interventional 3D datasets, Workflow support for embolization and needle guidance, extended visualization (e.g. DSA) and post-processing of 2D images or scenes on the XWP (Angio Viewer) incl. 2D functional imaging for visualization of blood flow characteristics (syngo iFlow) and side-by-side comparison of images or scenes (Scene Compare), in-room control for table-side operation of advanced applications, Expert-i functionality for remote operation of the XWP. Only for PURE systems, the package also includes: 3D Wizard for expert step-by-step guidance in 3D acquisition, Parallel patient processing capabilities, Fusion of pre-interventional 3D datasets based on 2 projections (2D/3D Fusion), Marking of points or lines on the 3D geometry or MPRs and overlay of these markings on live fluoroscopy.
1	**syngo 3D Basic SW license**
	Basic 30 viewer platform for display of 3D series with Multiplanar Reconstruction (MPR), Surface Shaded Display (SSD) and Maximum Intensity Projection (MIP).
1	**syngo Angio Leg Composing SW lic.**
	Module for creating native full-format images of the peripheral vascular tree.

Qty	Item Description

2   **Lower body radiation protection**

This radiation shield protects the user from scattered radiation when standing at the table side. It can be attached to the accessory rails either on the right or on the left side of the patient positioning table.

It provides the user an additional accessory rail.

It includes a basic unit

(71.5 cm x 75 cm/ 28,2' x 29.5" (l x w); 7.7 kg! 16.98 lb),

one lower body radiation protection pivot swivel element

(77 cm x 48 cm/ 30.3" x 18.9" (l x w); 3.8 kg! 8.4 lb)

and three clip-on units

(57 cm/ 22.4" x 33 cm/ 12.99" (l x h), 2.2 kg/ 4.85 lb;

27 cm/ 10.6" x 33cm112.99", 0.9 kg/ 1.98 lb and

27 cm/ 10.6" x 25cm/9.8", 1 kg! 2.2 lb)

with a lead of 0.5 mm/ 0.02" Pb.

The maximum weight of the accessory rails is 40 kg (88.2 lb).

Product may not be used in conjunction with a TRUMPF or MAQUET surgery table.

1   **Moveable upper body rad. protection**

This radiation shield protects the user from scattered radiation.

For room heights up to 290 cm/ 114.2".

It includes a ceiling rail (4m1 157.5"), a ceiling mounted and movable stand (80 cm or 57cm/ 31.5" or 22,4"), a support arm (75 cm x 90 cm/ 29.5" x 35.4") and an acrylic glass.

The shield is made of acrylic glass with lead equivalent of 0.5 mm

(w x h: 61 cm x 76 cm/ 24" x 29.9"), which can pivot and rotate around a fixed point with a range of 360 degrees.

The operation range is limited when used with Artis floor/biplane MN.

Max. weight: 18 kg/ 39.68 lb

Product may not be used in conjunction with a TRUMPF or MAQUET surgery table.

1   **LED Exam Light**

Ceiling-mounted, flexible positionable examination light with focusable light system. It is fully integrated into the ceiling-installed radiation protection mounting unit.

- Luminance: 60,000 Lux for 100 cm/ 39,4' distance

- Working distance: 70 to 140 cm! 27.6" to 55.1"

- Color rendering index Ra at 4500 Kelvin: 95

- Color temperature: 4,300 Kelvin

- Focusable light field: 14 to 25 cm/ 5.5" to 9.8"

- Diameter of light head. 33 cm/ 13"

- Number of LEDs: 19

- Total input power: 20 VA

1   **VA kit Artis QIQ.zen systems**

Second set of system documentation (operator manual, etc.)

1   **Intercom - Comfort**

Intercom system for communication between examination room and control room.

It includes

- a microphone with a control box for the control room

- a microphone with an adaptive acoustic filter for background noise suppression for the examination room

- a footswitch for conversation selection for the examination room

The microphone of the examination room is installed on the ceiling.

Qty	Item Description

Large Display diagn. Protection

The high quality laminated glass protective screen protects the panel of the monitor against mechanical damage and fluid ingress on the front.

It is suited for clinical image evaluation.

Features:

The laminated glass enforces high mechanical strenght and resistivity against mechanical impact,

the special coating reduces reflections for a continuous image quality,

excellent spectral transmisison of at least 98%,

can be added to existing Artis Large Display installations.

Weight: approx. 12kg (55") up to 16kg (60")

Note: Observe the maximum permissible load of the display suspension, a combination with other options mounted to the display suspension might be restricted.

Wide tabletop with thick mattress

This tabletop has a rectangular shape.

It includes a carbon fiber patient tabletop and a set of three Velcro body straps for securing and compressing the patient.

Maximum weight: 290 kg / 639.3 lb.

Maximum weight in connection with tilting table: 200 kg (440.93 Ib).

Weight: 12 kg/ 26.5 lb.

Length: 2278±1 mm! 89.7±0.04" m.

Width: 525±0.5 mm.

Matching this tabletop a mattress and a mattress cover is included. This mattress adapts to the individual body shape under the influence of body weight and heat.

It is made of open-pore polyurethane material.

Mattress thickness: 70±5 mm/ 2.8".

Mattress weight: 10 kg/ 22 lb.

It is made of open-pore polyurethane material.

Mattress thickness: 40±5 mm (1.6±0.2").

Mattress weight: 5 kg (11 lb).

Acc. rail module, wide tabletop

This is an attachable module with accessory rails for placing the control modules near the patient's abdomen.

It includes a carbon fiber module with accessory rails (45 cm /17.7") attached to the right and left slides over the outer edges of the patient positioning tabletop.

Length: 48 cm (18.9 ")

Width (without accessory rails): 47.5 cm (18.7") 55 cm/ 21.65"

Width (with accessory rails): 54.5 cm (21.5") 62 cm/ 24.4"

Length: 62 cm (24.4")

Weight: 5.9 kg (13 Ib)

Maximum weight: 40 kg (88.19 Ib).

Only for use with wide tabletops.

Arm holder (pair)

The patient's arms can be comfortably placed along the body using these two arm holders. They slide underneath the patient mattress and is held in position by the patient's weight.

It includes two pairs of arm holders of different length (540/690 mm - 21.2"127.2") and height (85/115 mm - 3.35"14.53"), suitable both for thick and thin patient mattresses.

Weight small arm holder: each 0.65 kg/ 1.43Ib

Weight large arm holder: each 0.95 kg! 2.09 lb.

Qty	Item Description

Product may not be used in conjunction with a TRUMPF or MAQUET surgery table.

Head position (prone - adult)

Qty: 1

During interventions requiring the patient to be positioned on the tabletop in prone (lying face down) position, the head can be positioned comfortably on a head pad filled with soft gel material. An oxygen tube can be inserted into the patients mouth from the side.

It consists of one gel pad for adults.

Dimensions: 28 cm x 25 cm x 14 crn/ 11.02" x 9.84" x 5.5" (I x w x h)

Weight: 3 kg/ 11.02 lb.

The head positioning device can be used in combination with the kyphoplasty arm rest.

Body strap set

Qty: 1

Can be used to secure patient to the patient table and to compress patient anatomy. It consists of two belts with Velcro straps (I x w: 185 cm x 10 cm/ 72.8" x 3.94').

Product may not be used in conjunction with a TRUMPF or MAQUET table.

Sec. operation in the control room

Qty: 1

Interface for connecting the additional system control from the control room.

Rail profile for hanging control modules (e.g. the table module) in the control room.

Safety button for switching off all system functions from the control room.

Secondary Hand Switch Ctrl (C Room)

Qty: 1

Additional hand switch for radiation release and additional control functions.

Emer. power supply img. system

Qty: 1

Emergency power supply for the monoplane imaging system.

Bridging of the imaging system power supply (50/60 Hz) until line voltage is back to prevent loss of data. In case of power failures of more than 90 seconds the imaging system will be shut down automatically.

Nominal power: 2.2 kW

DICOM RIS-Modality Worklist

Qty: 1

Import of patient/examination data from an external RIS/HIS patient management system with DICOM MWL (Modality Worklist).

Injector conn. in the control room

Qty: 1

Interface for controlling the contrast medium injector in the control room.

Injectors can be offered by Siemens Healthcare Accessory Solutions

AXA-CS special solution

Qty: 1

This option is used to order via SCM a special solution previously requested from the Customized Solutions Team. The price is presented by the Customized Solutions Team in a separate offer.

Customer documentation - 2nd copy

Qty: 1

Second operator manual

Large Display large work area

Qty: 1

Preparation for the large color flat screen display on an extended arm for increased reach and working range. An additional

cantilever beam extends the radial coverage of the display by approximately 60 cm.

This extended suspension is installed on a ceiling-mounted carriage. The display holder is height-adjustable, longitudinally mobile and can swivel and rotate.

Qty	Item Description

In case of a ceiling-mounted or biplane configuration the carriage operates in the same rails as the C-arm carriage, which
have been extended by 1.2 m for easy operation.

This item also includes cables for the examination room.

Note: The type of large display can be chosen with a separate position.

1 **Large Display video controller 18**

Large Display Video Controller 18 is the middle of three different video controller sizes. A maximum of 18 video signals can be connected and displayed simultaneously on the Large Display.

The Large Display video controller 18 receives various internal and external video signals for presentation to scale on the Large Display.

Up to 18 external and internal video sources can be connected (max. 14 DVI-D and **4** analog (VGA) channels).

1 **Add 19" display for LD (rear mount)**

19" TFT display including 36 m cable with DVI-D connection and transceiver for display installation on the rear of the DCS in combination with the Large Display.

1 **LD High Contrast panel size 55"**

Large color flat screen display (including cables) for the examination room, with a panel diagonal of 55". This large display version provides an excelling clinical image quality due to its new IPS panel technology.

1 **19" b/w display (ref)**

A 19" high-contrast -display for reference image display.

1 **Initial onsite training 32 hrs**

Up to (32) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum **of (4)** imaging professionals. Training will cover agenda items on the ASRT approved checklist. Uptime Clinical Education phone support is provided during the warranty period for specified posted hours. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.

1 **Follow-up training 32 hrs**

Up to (32) hours of follow-up on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Uptime Clinical Education phone support is provided during the warranty period for specified posted hours. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.

1 **Follow-up training 12 hrs**

Up to (12) hours of follow-up on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Uptime Clinical Education phone support is provided during the warranty period for specified posted hours. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.

2 **Additional onsite training 16 hours**

Up to (16) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum **of (4)** imaging professionals. Training will cover agenda items on the ASRT approved checklist if applicable. This educational offering must be completed (12) months from install end date. **If** training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.

Qty	Item Description
2	**GOVT Training Class (T & L not included)** Tuition for (1) government attendee to attend a classroom course of choice at one of the Siemens training centers. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.
1	**Mark 7 Arterion, Table Mount Injector** The Arterion Mark 7 Table contrast medium injector allows for the remote installation of the system power supply and installation of the injector head onto a table bracket.

The injector system includes:
Power supply and injector head with corresponding cabling
An adjustable height table bracket for the injector head
A desk mounted user control console with large touch screen

Functions
Pressure limitation:
for 150 ml syringes 689 to 8273 kPa,
corresponds to 100 to 1200 psi..

Flow rates for 150 **ml syringes:**
0.1 to 45 mils in increments of 0.1 mils
0.1 to 59.9 all/min in increments of 0,1 mllmin
rise/fall: 0 to 9.9 s in increments of 0.1 seconds

Release delay for injection or radiation:
0 to 99.9 s in increments of 0.1 s.

Adjustable volume for 150 ml syringes.
1 ml to the max. syringe capacity in increments of 1 ml,

Fill rate:
Variable syringe filling speed 1-20m1/s.

Injection protocols:
Up to 40 injection protocols possible.

Parameters currently displayed on the touch screen display and on the head display:
Injection speed
Injection volume
Remaining volume
Injection duration
Applied pressure

Contrast medium heating:
Nominal 35°C (95°F)+-5°C (9°F)

Injection data memory
Up to 50 injection data items stored

Included in the scope of delivery
Injector standard configuration 150 ml
SIEMENS interface cable

Qty	Item Description
	Operator Manual
	Service manual (English).
	Power supply
	200 V to 250 V. 50/60 Hz.
1	**Arterion Rack Mnt Install**
1	**Eaton Powerware 9355 15 kVA UPS**

Includes UPS, battery, maintenance bypass panel, and one year on-site parts and labor coverage (24x7) by Eaton Powerware. This UPS is recommended when protection and uninterruptible power is required for the Artis' C-arm and table. Emergency fluoroscopy is not available with this UPS. If emergency fluoroscopy is required, the 9390 - 160 kVA UPS is recommended for the full system. One UPS per lab.

Additional seismic brackets are required to make this system OSHPD approved.

Qty	Item Description
2	**Blue anti-fatigue floor mat for hospital**
1	**PERI BOLUS KIT**
1	**Standard Rigging zee SP GOV**

Offset Part 14434137 VA Kit Artis Q/ Q.zen systems

One complimentary biomedical tuition is included with the purchase of this system. This training must be completed before the end of the warranty period.

This educational offering must be completed by the later of (12) months from purchase of training or if applicable, completion of installation. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.

Offset Initial Training 32 hrs

Additional Rigging AXA,

OPTIONS

All items listed below are OPTIONS and will be included on this system ONLY if initialed:

Qty	Item Description

1

Head-end table tilting

Motorized tilt and stepping of the patient table in longitudinal direction for electrophysiological or peripheral examinations, for example, as well as for stabilizing a patient. Includes a power-assisted tabletop control module.

Notes:

Table tilting reduces the maximum patient weight to 200 kg. As before however, it is possible to install up to 40 kg of additional accessories.

Note: It is mandatory to provide UPS back up with this table option in order to comply with IEC 60601-2-43 CL. 201.15.101: Reason In the event of power failure a neutral table position suitable for CPR must be reachable within 15 seconds. Please include a suitable UPS from Siemens as required or make sure any existing / planned UPS provision for your installation site will satisfy the requirement

1

Mem. enhncmnt. 4 (100k-1k Matrix)

Memory capacity extended by 50,000 images, from 50,000 images to 100,000 images in 1k matrix.

1

syngo DynaCT SMART

Streak Metal Artifact Reduction Technique for syngo DynaCT images.

Metal implants, like coils and stent markers, create artifacts in the reconstructed images that might make it difficult to detect bleedings or restenosis around the ends of the stent, for instance. syngo DynaCT SMART is a dedicated reconstruction algorithm to reduce metal artefacts.. This type of integrated image reconstruction protocol results in 3D volumes with reduced metal artefacts.

1

syngo 3D Stenosis Measurement

The application syngo 3D Stenosis Measurement allows analyzing a vessel segment using 3D views, e.g. MPR, VRT

Based on a 3D volume the user marks the vessel of interest with two mouse clicks. The vessel is automatically segmented and the centerline of the vessel is calculated. The vessel can be displayed with a curved MPR along this centerline and key stenosis parameters are calculated such as smallest and biggest area of all cross sections along the vessel's course in the analyzed range.

Additionally, the users can "scroll" interactively along the vessel while detailed stenosis parameters are calculated for each MPR such as minimum diameter, maximum diameter and area of the vessel's stenosis cross-section as well as minimum lumina! diameter and minimum luminal area.

syngo QVA vascular analysis

Vessel analysis with determination of degree of stenosis, distance measurement and calibration.

Narrow tabletop with thin mattress

This tabletop is for maximum freedom of C-arm angulation.

It includes a carbon fiber patient tabletop and a set of three Velcro body straps for securing and compressing the patient.

Maximum weight: 240 kg (529.1 lb),

Qty	Item Description

Maximum weight in connection with tilting table: 200 kg (440.93 Ib).

Weight: 10 kg/ 22 lb.

Length: 2287±1mm/ 90±0.04",

Width head-end: 228mm/ 8.98".

Width middle body: 450 mm/ 17.7".

Width lower body: 525 ±0.5mm! 20.7±0.02".

Matching this tabletop a mattress and a mattress cover is included. This mattress adapts to the individual body shape under the influence of body weight and heat,

It is made of open-pore polyurethane material.

Mattress thickness: 40±5 mm (1.6±0.2").

Mattress weight: 5 kg (11 Ib).

1

Acc. rail module, narrow tabletop

This mounting frame is a table module with accessory rails for mounting control modules on the tabletop near the patients abdomen.

It includes a radiolucent carbon fiber board with accessory rails attached to the right and left slides over the outer edges of the patient tabletop.

Maximum weight: 40 kg/ (88.19 Ib)

Weigth: 5.8 kg! (12.79 Ib)

Width carbon fiber board: 47.5 cm! 18.7"

Width with accessory rails: 54.5 cm/ 21.46"

Length accessory rails: 45 cm/ 17.7"

Length: 48 cm/ 18.9 "

Can only be used with narrow tabletops.

May not be used with MediGuide Technology.

1

OEM recording system interface

Cable connection to an OEM measurement system.

Holder for the ECG interface when using an OEM measurement system in the examination room.

Recording, storage, and display of an ECG lead. Displayed together with the image information on a single monitor.

1

Additional onsite training 24 hours

Up to (24) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist if applicable. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.

1

Arterion Pedestal Install

1

RaySafe i2 Personal Dosimetry

The RaySafe i2 package enables continuous improvement of working procedures in X-ray environments by providing staff with personal, real-time information about scattered X-ray dose.

The Real-Time Display enables immediate changes in working procedures in order to minimize dose

The Personal Dosimeters supply the Real-Time Display with information about each individual's personal dose

The Dose View software makes it easy to review radiation data.

The optional Dose Manager software makes it easy to report. export and

Qty	Item Description
	archive radiation data. The RaySafe i2 system includes: 1 x RaySafe i2 Real-Time Display 4 x RaySafe i2 Dosimeters 1 x Dose View software package 1 x RaySafe i2 Cradle 1 x RaySafe i2 Mounting Rack Installation and a one (1) year warranty provided by Unfors
1	**Additional RaySafe i2 Dosimeter** Additional RaySafe i2 Dosimeter
1	**RaySafe Dose Manager software package** The RaySafe i2 dose manager is advanced software for analyzing, reporting and archiving dose information. In addition to i2 dose viewer's features, i2 dose manager handles multiple dosimeters and can retrieve the dose information from multiple real time displays through the hospital network.

Detailed Technical Specifications

Description

System description:

The single plane X-ray angiography system for digital acquisitions was designed to meet the requirements of modern angiography and interventional procedures, with a focus on interventional radiology.

C-arm ceiling-mounted stand:
System cable outlet at the ceiling carriage, on the patient's left side.

- Up to 5 preprogrammed work positions, additional 50 user-definable work positions and 3 direct positions can be stored and recalled from table side.
- One single joystick for patient angle oriented operation of C-arm and change of source image distance (SID).
- Integrated computerized collision protection
- C-arm positioning 0° to the head end and variable up to 135° to the left and right side along the patient longitudinal axis.
- Double oblique projections of ±100° in orbital movements and up to 330° (+180°/-150°) in rotational movements.
- Variable C-arm speeds up to 25°/s.
- Variable focal-spot-to-detector distance between 90 cm and 120 cm.
- Isocenter-floor distance 108 cm.
- Focus-isocenter distance 78.5 cm.

MULTISPACE.T
The stand can be positioned on the left or right of the patient or at the head end, or at any angle in between. It can be moved longitudinally to any position along the length of the patient and also has a park position at a sufficient distance from the patient.

In Focus allows the projection angle to the patient to remain unchanged when rotating the C-arm around the table.

IsoTilt allows the projection angle to the patient to remain unchanged when tilting the patient table (if the tilting function is available).

Both In Focus and IsoTilt improve the efficiency of an examination because there is no need to spend time adjusting the projection angle.

Patient table configuration

Table

- Direct patient access from all sides, both through the swiveling table and large tabletop cantilever.
- Electromechanical release of table swivel at the touch of a button at the table.
- Telescopic foot with motor-driven height adjustment.
- Maximum patient weight: 250 kg. It is possible to install up to 40 kg of additional accessories, plus a further 100 kg for patient resuscitation.

The table can be rotated to ensure quick access to the patient even in emergency situations.

Tabletop
Patient positioning tabletop made of carbon fiber in wide, straight design for universal use. The tabletop is straight all the way to the head area

<u>Description</u>

<u>Mattress</u>
Matching, special-foam mattress, 4 cm, incl. a latex-free cover.
This visco-elastic comfort mattress reacts to temperature and has the special property of adapting to the individual body shape under the influence of body weight and heat.

<u>Application-specific accessories</u>
- Infusion bottle holder
- Unilateral armrest: Carbon fiber armrest for cardiology and arm angiography to slide underneath the positioning mattress.

    Arm holder (1 pair): Two arm holders for comfortable lateral arm positioning along the patient's body.
- Instrument tray: Plastic instrument tray to be positioned at the patient table above the patient. It is swivable and height-adjustable, so that it can be positioned directly or sideways above the patient.
- Hand switch for radiation release and additional control functions.

Operating modes

<u>Fluoroscopy</u>

    Digital pulsed fluoroscopy with pulse frequencies of 7.5 p/s, 10 p/s, 15 p/s, and 30 p/s in 1k/12 bit matrix. Pulse rates of 0.5 - 4 pis are also possible with CAREvision.
- Overlay fade: On-line overlay of the reference image onto the active fluoroscopy. This improves efficiency and safety during interventional procedures because additional information which is clinically necessary can be displayed directly in the live fluoroscopy image.

<u>Digital acquisition technology</u>
Digital acquisition technology with frame rates of 0.5 to 7.5 f/s in 1k/12 bit matrix and digital real-time filtration
Single image and serial acquisitions with time-controlled and manually variable frame rate.
The 1k image matrix with a bit depth of 12 bits allows an excellent image contrast by using 4,096 shades of grey. Thus, the image quality meets highest expectations in angiography and fulfills all prerequisites for precise diagnostics and safe interventions.

<u>Digital Subtraction Angiography:</u>
Digital Subtraction Angiography with frame rates of 0.5 to 7.5 Ps, including pixel shift, remask, roadmap, peak opacification for iodine contrast (MaxOpac), and CO_2 contrast (MinOpac); adding of the anatomical background (landmark) from 0 to 100%.
Includes the "Advanced Roadmap" additional function which offers the following clinical benefits:
- DSA image can be selected as a mask for Roadmap
- Zoom can be changed during Roadmap

    Catheter and vascular contrast can be changed separately
Unexpected patient movements in DSA acquisitions can be corrected easily with Auto Pixelshiff. This saves time for the user and improves image quality.

CLEARmap
Special 2D Roadmap operating mode creating a vessel map from a DSA-scene using Maximum Opacification technique. As an additional operating mode, you can also decide to pick one frame out of a DSA run (i.e. for venous access in Roadmap).
This provides improved image quality compared to conventional Roadmap, and reduces x-ray dose and contrast media.

CLEARmatch

Description

Automatic/Online pixel shift processing for most accurate subtracted image display during Roadmap and DSA based on real time movement detection and compensation.

Six degrees of freedom - vertical, horizontal, rotational, zoom and shearing movement (left and right) - allowing highest possible efficacy. In order to show the most recent information in raw format, the pixel shift operation is applied to the mask image. This optimized way of pixel shifting ensures a perfect match of Roadmap image and native fluoro image, being shown at the Assist monitor.

CARE package

ALARA principle

Siemens follows the ALARA principle: As Low as Reasonably Achievable"; the CARE package (Combined Applications to Reduce Exposure) was developed based on this research and development principle to protect the examiner and the patient.

Dose saving

CAREfilter: Intelligent control software that minimizes X-ray dose. During fluoroscopy and acquisition, special copper prefilters are automatically inserted into the X-ray beam depending on current X-ray transparency, which is calculated continuously. This is necessary to ensure that the optimal prefilter value is always active. This automation makes work easier for the user because the optimal filter setting need not be adjusted manually for each case.

The adaptive Cu prefiltration has five steps (0.1, 0.2, 0.3, 0.6, 0.9 mm) and is used to lower the reference air kerma and improve radiation quality by reducing the low-energy X-ray radiation.

CAREvision with as20 detector: Pulsed fluoroscopy with additional, reduced pulse rates of 0.5, 1, 2, 3, 4, 6 p/s. Adaptation of pulse rate to the current application requirements for significant reduction of radiation exposure, especially during interventional procedures.

CAREvision with as4OHDR detector: Pulsed fluoroscopy with additional, reduced pulse rates of 0.5, 1, 2, 3, 4 p/s. Adaptation of pulse rate to the current application requirements for significant reduction of radiation exposure, especially during interventional procedures.

CAREprofile: Radiation-free positioning of the primary and semi-transparent diaphragms by means of graphic display in the LIH (Last Image Hold). Collimator shutters and semi-transparent filters can be adjusted as a graphical overlay on the last-image-hold without any need for fluoroscopy or radiation.

CAREposition: Radiation-free object repositioning by means of graphic display of the X-ray center beam and image edges in the LIH image. With CAREposition it is possible to reposition the object under visual control without radiation.

In case of table movements the current position of the central beam and the image edges are superimposed on the LIH image as orientation points.

Low dose acquisition: enables dose savings of up to 67 % during the examination. The Low Dose Acquisition protocol can be released with a separate pedal on the footswitch.

Dose monitoring

CAREwatch: Display of the measured dose-area product and the calculated patient reference air kerma on the flat-screen display. Electronics unit with DIAMENTOR measurement chamber integrated in the collimator housing for dose acquisition.

Configurable screens on the data display and imaging system monitor.

During fluoroscopy: Reference air kerma rate.

During fluoroscopy interval: Accumulated reference air kerma or dose-area product, or percentage of the reference air kerma limit (total from fluoroscopy and acquisition).

CAREguard: Monitoring the reference air kerma. If the accumulated reference air kerma exceeds one of the three configurable limits, a warning appears on the live display and tableside on the touchscreen control. This allows ideal monitoring of the accumulated reference air kerma during the examination.

CAREmonitor: Special model-based monitoring of the measured skin entry dose, taking into account the geometric conditions of the system (actual device angulation, table position, patient weight, patient size). It then continually displays whether the skin entry dose applied to a specific region of the patient's body exceeds a specific configurable upper limit. CAREmonitor continually calculates and displays the actual accumulated skin entry dose as a portion of this upper limit. This helps the user to detect a potential patient hazard at an early stage. The patient is therefore better protected against the damaging effects of radiation.

Dose documentation

Description

CAREreport: Dose information as part of the DICOM Structured Report After each examination, the information is available in DICOM format and can be sent to a DICOM archive together with the image data, for example. Saving dose information in **DICOM** format also enables flexible analysis and further processing via a DICOM-capable analysis software/database.

- CARE Analytics: Standalone PC program for analyzing doses in angiography, CT, and radiological examinations. The data can be exported to statistics programs such as Microsoft Office Excel and SPSS for further analysis. CARE Analytics is available for download from the Siemens Intranet.

CLEAR package

The CLEAR package enables optimized image quality through real-time processing of the image data without increasing the radiation dose.

- CLEARpulse optimizes the X-ray pulse in two ways: the high pulse power allows for additional filtration to reduce radiation. In addition CLEARpulse shortens the X-ray pulse through the use of grid-pulsed flat emitter technology in concert with a high anode rotation speed. The required X-ray energy can be provided in a shorter period of time, thereby shortening the X-ray pulse by up to 43% at constant tube voltage. Moving objects like coronary arteries can be visualized sharper and with less blurring artifacts.

- CLEARcontrol: The new histogram analysis provides a more homogeneous image impression by harmonizing over- and underexposed areas of the image. This is done fully automatically, thus eliminating any further manual user corrections through windowing.

  CLEARview: Dose-dependent filtering of the image data efficiently suppresses image noise, enabling clear, sharp images, even for low-dose acquisitions.

  CLEARvessel: Every pixel is analyzed in real time, and vessel edges are shown in high contrast without adding noise to the image.

  CLEARmotion: Fine moving structures, such as small vessels and guidewires, are detected in the image and motion artifacts are suppressed efficiently. The visibility of small moving vessels and guidewires is improved significantly during fluoroscopy.

In addition there is Dynamic Density Optimization (DDO) for on-line harmonization of native series and single images.

Image **generation**

X-ray generator
Microprocessor-controlled high-frequency X-ray generator with automatic dose rate control.

Power output: 100 kW at 100 kV (IEC 60601-2-7 and 1EC 60601-2-54).

- SID tracking: Automatic tube current adaptation to focal-spot-to-detector distance.

- CAREmatic: Automatic X-ray control system for fully automatic calculation and optimization of exposure data based on fluoroscopic data

  Patient transparency monitoring.

- Tube load monitoring with indication in the live display.

The optimal X-ray parameters depend on the transparency of the patient at the current angulation, measured during fluoroscopy. These parameters are continuously calculated and updated. Test shots are no longer required. This ensures superior image quality and minimum radiation exposure for user and patient with every exposure release.

GIGALIX 125/30/40/90 - X-ray tube assembly
Triple-focus high-performance X-ray tube assembly with unique flat emitter technology for generating extremely high tube currents of max. 250 mA in fluoroscopy and 1000 mA in acquisition. This provides very good image quality even with heavier patients or steep angulations. The focus is always quadratic and permits outstanding perceptibility of small structures with a nominal quadratic focus of 0.3/0.4/0.7. The anode has a high heat storage capacity of 5.2 MHU and the metal center tube with liquid bearing technology allows a maximum cooling power of 1520 kHU/min. This means that pauses are not required during radiation, even for lengthy procedures, The X-ray tube is almost silent, which is an additional benefit for patient and user.

Description

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as4OHDR flat detector
The digital high-resolution dynamic flat detector with integrated removable grid is especially designed to fulfill the requirements of interventional imaging.
The detector features 16-bit analog-to-digital conversion, resulting in a gray scale resolution of 65,536 gray scales. This in turn improves contrast resolution in 3D imaging with *syngo* DynaCT.

The increased scintillator layer thickness of 750 pm results in a high DOE (Detective Quantum Efficiency) of 77%, thereby improving image quality at low radiation doses.

154 pm pixel arrays provide highest spatial resolution (3.25 LP/mm) and excellent contrast. Acquisition frame rates of up to 60 f/s are possible.

Usable input formats:

Overview mode 30 cm x 38 cm

Zoom 1: 30 cm x 30 cm; diagonal 42 cm

Zoom 2: 22 cm x 22 cm; diagonal 32 cm

Zoom 3: 16 cm x 16 cm; diagonal 22 cm

Zoom 4: 11 cm x 11 cm; diagonal 16 cm

Zoom 5: 8 cm x 8 cm; diagonal 11 cm

The flat detector is mounted on a motorized rotating turntable at the C-arm. It can be rotated by 90°, so that it can be adjusted to landscape format or portrait format. Any angle in between can be adjusted.
Motorized adjustment of the detector-patient distance.

The as4OHDR flat detector offers additional operating functions directly on the detector housing, such as angulation, FO rotation (cranial/caudal, RAO/LAO), and change of the focus-detector distance.

Removable grid:
The grid can easily be removed, saving the user time in examinations not requiring a grid. For example in pediatrics, where dose reduction is especially important.

Angio collimator
Compact multileaf collimator with rectangular blade, wedge-shaped finger filters for DSA and cardiological applications and graduated filter.

Independent rotation and shift of filter blades

Automatic synchronous rotation of detector and collimator unit to compensate image rotation at the different examination positions of the support stand.

Rotation also possible via table side control enabling upright images of objects or body parts not aligned with the table e.g. arms.

Manual rotation of the detector and collimator unit using the control right on the detector housing.

Five-step adaptive Cu pre-filtration (CAREfilter) to reduce the equivalent skin dose and improve radiation quality through dose saving for the soft radiation parts. Filter steps: 0.1; 0.2; 0.3; 0.6; 0.9 mm Cu.

Electronics unit with **DIAMENTOR** dose measurement chamber integrated in the collimator housing, for acquisition of the dose-area product and the calculated patient entry air Kerma at the patient entrance reference point (CAREwatch).

StraiohtView
The flat detector and the multileaf collimator are installed on a motorized rotating turntable on the C-arm. They automatically line up with the table swivel, thus ensuring upright images of objects which are in line with the table.
The flat detector and multileaf collimator can also be rotated together at any angle relative to the table, enabling upright presentation and collimation of objects which are not in line with the table.

Image processing
- Image display as positive and negative, windowing, contrast and brightness control, electronic display shutter,

Description

image shift (roaming), vertical and horizontal image inversion, magnifying glass, and zoom functions

Storing of single images as reference images for acquisition and fluoroscopy

Quantification: angle and length measurements, automatic and manual calibration

Text functions: user-definable image annotation, free annotation or by means of text components, comments line for the image, R/L display

Fast and direct access to all series, single images, reference images, and photo file images via MULTIMAP. Access possible both in the examination and in the control room for displaying or post-processing images

Imaging system

Dual architecture
In order to provide highest level system availability, the imaging system consists of two independent computer systems that manage central tasks such as real-time image processing during fluoroscopy or acquisition as well as post-processing and networking functionality separately from one another. This ensures the best possible system performance and availability.

Image storage capacity
25,000 images in 1k/12 bit image matrix. This can be optionally extended to 50,000 / 100,000 images.

Image export and networking

DVD/CD burner
DVD drive for automatic digital image storage in the background on DVD-/CD-ROM for off-line data exchange in DICOM format.

Networking

- Network interface (1000 BaseT) with the fallowing integrated DICOM services:

- DICOM Send: Sending of images into the DICOM network: The DICOM Send function enables fully automatic transfer of generated image data to a DICOM archive and/or a DICOM workstation. The user can perform his examinations without interruption, while the system is fully automatically transferring the images to the archive scene by scene. This is a background process, and thus does not interfere with the ongoing fluoroscopy or acquisition.

- DICOM Storage Commitment (StC): Feedback from the image archive. The DICOM StC function automatically gives feedback on whether the generated image data were successfully transferred. This provides the necessary certainty to the user before deleting the acquired images locally in the imaging system.

- DICOM-Query/Retrieve: Retrieval of archived images from a digital archive or from a workstation: Already archived image data from a previous examination can be fully retrieved and is then available for review and processing. The user can request CT or MR system images from the archive and display the image in the examination room. There is no need for a separate workstation.

- DICOM Structured Report: All the quantification results obtained on the system as well as all dose information on the individual radiation releases can be saved in DICOM SR (enhanced SR) format and transferred to a DICOM network.

Note concerning DICOM interface(s)
The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s).
Functionalities across interfaces with/between partner systems require explicit validation, since the interpretation of the interface by the partner/target system is not part of the product's responsibility.
A modification of the interface that might be required is not included in the offer; e.g. for the rare case that available configurations are not sufficient. With regard to expenses for interface configurations that might be required, the agreements on maintenance/service of the product apply.

Display and display suspension

Displays in the exam room

Description

Live and Assist displays are 19" TFT color and gray scale fiat-screen displays with high luminance and extended viewing angle.

- Screen size: 19" (48 cm)

  Resolution: 1,280 x 1,024 (pixels)

  Excellent brightness for the entire service life: 400 cd/m ^{2} at a contrast ratio of 1000:1

  Flicker-free and distortion-free image display

  Ambient light sensor for optimum adaptation of the image display to the room brightness

Reference images are shown on the Assist display.
Data for device and table position, dose data. and system messages are displayed in the examination and control room on both the live and the Assist display.

Displays in the control room
19" high-contrast display for live image display in the control room is included as a desktop version.

Display suspension
Ceiling-mounted, swiveling, rotating, and height-adjustable display suspension system with longitudinal travel. It features two 19" high-contrast TFT displays for live and reference image display in the examination room (Standard configuration - unless modified).

Operation

synod
The intuitive syngo operating elements allow for managing the whole process from preparation of the patient to image post processing in a safe, reliable, and time efficient way.

Footswitch
A 4-pedal wired footswitch to release fluoroscopy, exposure, and table brake as well as a configurable additional function is included as standard

In the examination room
For an ideal workflow, full operation capabilities for the system can be accessed directly at the patient table. These include complete system operation through modular control elements for controlling C-arm movements, the patient table, and the multileaf collimator.

syngo-based touchscreen with multi-functional joystick for operation of the imaging system, including post-processing and quantification as well as selection of the organ programs. The touchscreen is specifically configurable to individual clinical requirements.

This means that the user can operate the system on their own without having to leave the examination room if this is deemed necessary by the situation.

In the control room
Standard Siemens syngo control via country-specific keyboard and mouse for all imaging system functions such as image post-processing, storing, and configuring of organ programs.

Siemens Remote Service SRSTTM
Prepared for Siemens Remote Service SRST" (during warranty, then with service contract):

- Hardware and software remote diagnosis.

- System remote configuration, e.g. adding of a DICOM node.
Early warning system ensuring system operation.

Description

strategy and allows you to take advantage of technological advancements.

Customer Care - the customer care solution from Siemens Healthcare
From the moment you purchase your Siemens system you will benefit from many services that are offered by "Customer Care⁻. These include:

- Initial application training
- Interactive e-learning for various applications
- Free customer magazines
- Arrangements for clinical training via a global network
- Free trial licenses

You will find information on our e-learning program and further details on general ''Customer Care" services on the Internet.

* The availability of "Customer Care" services may be restricted for some systems.

User Training
Siemens recognizes the significant investment you are making in purchasing a new imaging system and are determined that you are able to realize the full capability of this new system. Siemens clinical applications training ensures you have every opportunity to fully utilize your new system.

Content of user training: Handover Training and Follow-up Training

- Introduction to the functions, options, and handling of the Angiography system
- Instruction on the use of the Angiography system together with modern, highly-developed applications

Delivery & duration of the user training varies and may be country specific so for additional information please contact your local Siemens representative.

Automap optimizes the procedure workflow, especially during interventions. A selected reference image displaying the needed medical information (e.g. before dilatation) is used as the basis for moving the system to the correlated position automatically. The intervention can be continued immediately without manually repositioning the patient. On the other hand, the system is able to select a reference image for the current device position. In case of changes in device position, this enables the user to see the corresponding reference images quickly and safely.

Excellent image quality from the abdomen to the feet is due to the fact that adjustable parameters such as acquisition frame rate, measuring fields, position of collimator blades and semitransparent filters are stored specifically for each table position. That way the different X-ray transparencies for abdomen, legs and feet can be compensated and a consistent image quality with best possible contrast is achieved.
Just one single injection of contrast media protects the health of the patient and gives the physician an instant, subtracted image display of the peripheral blood vessels,

PERISTEPPING:
Peripheral digital stepping angiography with only a single contrast medium injection under visual control of the bolus flow.
Gantry stepping with zeego and ceiling mounted systems, table stepping with floor mounted and biplane systems

- Position-dependent variable frame rates.
- Fully automatic exposure control.
- Automatic storage of the collimator setting for each step.

PERIVISION:
Peripheral digital stepping angiography with online subtraction display in an examination procedure with only one single contrast medium injection under visual control of the bolus flow.

- Only one single automatically acquired mask image for each individual position.
- Position-dependent variable frame rates.
- Fully automatic exposure control.
Automatic storage of the collimator setting for each step

Description

Angle-triggered digital rotation angiography enables dynamic image display with 3D effect Dynamic subtraction with optimum alignment of masking and filling, and automatic pixel shift in the entire scene.

    Rotation speed is 60°/s (Artis zeego and Artis ceiling) and 45°/s (Artis floor and Artis biplane).

    Acquisitions with frame rates in 1k matrix from 0.5 to 7.5, 10, 15, 30 f/s (standard) and 60 f/s with reduced spatial resolution can be selected,

    Angle triggering allows a reduction in dose through a reduced acquisition frame rate while at the same time achieving better image quality.

Includes DYNAVISION DR for native rotation angiography and DYNAVISION OSA for subtracted rotation angiography. Reconstruction at the *syngo* X Workplace is not possible with this operating mode.

Note: For biplane systems rotation angiography is available in plane A only.

Measuring program integrated in the imaging system for objective, precise and reproducible evaluation of vessels.

-    Automated contour detection.

    Determination of degree of stenosis.

    Automatic and manual reference diameter determination.

    Automatic and manual calibration methods.

    Distance and angle measurement.

The Vessel analysis allows precise quantification under sterile conditions, direct at table side with the touchscreen control. This speeds up the intervention and makes the procedure safer for the patient. The reports can be easily stored in the patient folder for documentation and to show the correct analysis of dilatations etc.

Especially to be used for vessel sizes between 0.5 mm and 50 mm.

Contents:
The syngo X Workplace is a dedicated workstation for image postprocessing. Its functionality can be extended with additional software functions to suit specific user or clinical needs in angiography, surgery, and cardiology. The use of the licensed software is limited exclusively to the specific *syngo* X Workplace included with this configuration

syngo **X Workplace PC**
The high-performance workstation is equipped with an Open GL accelerator board to support 3D applications. To exchange medical images on DICOM-compatible CD-Rs and DVDs, the system is equipped with a CD/DVD burner.

syngo X Workplace can be connected to an existing network via 1000/100/10 Mbit Ethernet.

Examination room: 19" color flat display or Artis Large Display connection kit
With this configuration, if an Artis Large Display is ordered - the configuration includes a connection kit for the Artis Large Display. If an Artis Large Display was not ordered - a display is delivered additionally for the examination MOM_

Control room: two 19" color flat displays or Artis Cockpit connection kit
In this configuration, there are also two displays for the control room or two connection kits for an Artis Cockpit

The Siemens **19" LCD** color display features very high contrast even under very bright ambient light conditions. The Gamma curve was precisely adapted to the CIE/DICOM recommendation and is thus especially suited for gray scale display.

LCD color display

    19" (48 cm) screen size

    Resolution: 1280 x 1024 (pixels)

    Excellent brightness for the entire service life: 137 cd/m' at a contrast ratio of 300:1.

    Flicker-free and distortion-free image display

    Anti-glare screen

The controlled background lighting provides stable lighting throughout the entire product life cycle.

Description

syngo X Workplace Basic User Software
The *syngo* X Workplace software features an intuitive and thus easy to learn user interface developed from prototypes tested in close cooperation with users.

Standard functions such as filming or image review, and optional clinical application software, are performed in individual processes on dedicated task cards. A number of functions and input parameters, as well as the language used, can be selected according to individual requirements.

Package includes the following software licenses
Basic software with CD and dongle for the following functions:
- Patient Browser
- Filming
- Viewer
- System services

Patient Browser:
- Patient management.

    DICOM communication with Send, Receive, Query/Retrieve, Print,
- Reading and importing image data from CDs/DVDs.
- Module for writing DICOM CDs/DVDs for data exchange. Writing is in background mode.

Filming:
A virtual filmsheet shows a 1:1 display of the film sheets to be printed. This permits an effective preview of the filming job and the windowing of images, as well as providing a large number of evaluation functions.

Viewer:
The Viewer supports interactive 2D review, evaluation, and documentation functions. Multiple studies from the same patient can be displayed side-by-side for comparison.
- Image display: 1.024^2 screen matrix, configurable with up to 64 image segments.
- CINE display: Automatic or interactive dynamic presentation technique for the visualization of time and volume series.
- Synchronized viewing of multiple series.
- Measurement and annotation: Text annotation; distance, angle, circle, ROI and pixel lens, depending on information available from the acquisition system.

System services:
Microsoft Office Word, Excel, PowerPoint plus Outlook are supported (not provided!),
- Any user-selectable file, such as cardiac or angiographic acquisitions, DSA or 3D AVI video sequences, can be burned to CD, or exported to USB stick, to prepare quality presentations and demos of pathologies.
- Network module: For connection to a local Ethernet (Gigabit or 100 Mbit) for communication with networked archives, printers, diagnostic and therapy workstations, and teleradiology routers.

Scope of functions
- Network stations can be configured.
- Unlimited selection of stations.

3D image generation

3D rotational angiography
In 3D rotational angiography, a sequence of 2D projection images is acquired by a C-arm performing a fast rotation around the isocenter in which the patient is positioned.
Image data are transferred automatically to a *syngo* X Workplace for time-optimized 3D image data reconstruction.

__Description__

- All parameters required for the 3D reconstruction are included in the organ program. This enables optimized image quality and easy handling, as well as the fastest possible 3D reconstruction.
- Rotation speed is up to 88°/s (Artis zeego with *syngo* Dyna3D HighSpeed), 60°/s (Artis ceiling), and 45°/s (Artis floor and Artis biplane).
- Angle triggering allows a reduction in dose through a reduced acquisition frame rate while at the same time achieving better image quality. In addition, it allows for accurate subtracted rotational scans.

3D reconstruction and visualization of a volume are performed in real time in volume rendering technique, MPR, and MIP. 3D Rotational angiography is used in particular as support in interventional radiology and neuroradiology in the angiography laboratory Based on dedicated acceleration hardware the primary reconstruction results are available in full diagnostic quality in the examination room within 19 seconds for high contrast images and less than 42 seconds for soft tissue DynaCT images. Subsequent secondary reconstructions are available even faster.

Note: For biplane systems rotation angiography is available in plane A only.

syngo DynaCT
syngo DynaCT is especially suited to support radiologists and neuro-radiologists during interventional procedures in the angiography suite with both endovascular and non-endovascular procedures. *syngo* DynaCT provides enhanced decision making during oncology procedures such as chemoembolization and RF-ablations. In neuroradiology, *syngo* DynaCT allows the visualization of bleedings, the ventricular system of the brain and microstent placement.

With syngo DynaCT it is possible to visualize a soft tissue difference of 10 HU (Hounsfield Units) of an object 5 mm in size, or 5 HU for an object 10 mm in size, in a Thick-MPR display (measured with a CATPHAN 16 CT phantom with the CTP 515 module). Homogeneous image quality is achieved across the entire image. As a result, critical regions such as the base of the skull can be displayed with a lot fewer artifacts.

DynaCT also offers:
- a new reconstruction algorithm optimized for cone beam geometry
- a 20sDR-H 109 kV DynaCT acquisition reducing beam hardening artifacts and therefore improving e.g. detection of bleedings in DynaCTs with intravenous injection of contrast material
- faster 3D acquisition in 4x4 Binning mode

In conjunction with Artis zeego, *syngo* Dyna3D HighSpeed — being the fastest 3D protocol on the market — enables acquisitions to be generated in less than 3 seconds. As a result, moving organs such as the lungs can be displayed with a lot fewer artifacts. In addition, —30% of contrast material can be saved which is important esp in procedures requiring injection of a high volume of iodine (e.g. for enhancement of the aorta).

syngo DynaPBV Body
syngo DynaPBV Body provides 3D physiologic information regarding blood volume in lesions and surrounding tissue. The visualization of color-coded blood volume maps is based on a special dual-sweep *syngo* DynaCT acquisition program followed by an elaborated computation of the blood volume steady-state information
The software can demonstrate e.g. successful complete embolization of tumors, but it can also reveal critical physiologic changes in tissue perfusion e.g. after coil-embolization of side branches feeding non-tumor-bearing tissue, or it can also help in discovering suspicious (re-)perfusion around treated tumors indicating potential tumor recurrence.

3D Image Manipulation
The 3D XWP comes with applications that facilitate interactive volume rendering, accelerated by a high-end 3D graphics card. It offers support for large data records of up to 1,500 images (512 x 512 matrix).

In angiography, surgery, and cardiology, the three-dimensional information is used for diagnosis, planning of therapy and documentation.

Diagnosis and treatment can be performed in one session. This offers a significant advantage thanks to the fully-integrated workflow, for example the
- Transfer of the projection angle (that has been adjusted by the user in the XWP 3D volume) to the C-arm stand.

Description

- Realtime synchronization between reconstructed volume and C arm position (Volume following the C arm position)
- indication whether the angulation can be achieved at the C-arm without collision with the patient or table.
- Interventional volume measurement.

Features:

Reconstruction protocols for visualization of vessels, bones, clips and coils.
- The result of the reconstruction can be native or subtracted.
- Modification of reconstruction area to allow zoom via reconstruction.
- Visualization with shading and light source for an improved three-dimensional impression.
- Interventional volume measurement.

Link between C arm geometry and reconstructed volume: driving the C arm to exact projection position according to the view of the reconstructed volume and/or setting the volume to follow realtime C arm positions.

Image data:

- Viewing of volume data from AX, CT, MR, **and PET** modalities.

Loading of two volume data sets simultaneously.

Multiple Layouts: single (1on1), double (2 only and quadruple (4onl) for MPR display.
- Two displays are supported for simultaneous display of two volumes side-by-side.

Image display modes:

- VRT, Color VRT, MIP, MinIP, and MPR rendering.

Thin slice renderings for **VRT, MIP, and MinIP.**
- Variable light source.

Shading effects.

Volume editing:

- Cut planes.
- Editing of clip planes and control volumes.
- ROI punching.

Presets:

- Series-specific bookmarks, to store and retrieve volume visualization parameters.

Global presets for series-unspecific application of volume visualization parameters.

Output:

Radial ranges, including macro range definitions.
- 20 and 3D measurements, measurement grid, distance measurement and annotations.
- AVI format export with selectable compression format and compression ratio.
- TIFF, PNG, BMP, JPEG image export.
- Send to film sheet.

Sending of parallel ranges results to PACS.

30 **accessories**

Includes the accessories required for 30 setup and calibration:

Plexiglas calibration phantoms
- Line phantom for image quality control
- Form filter

3D data link

Description

Dual volume visualization

Enables the differentiation between two high-contrast 3D objects that have virtually the same contrast density by choosing different visualization presets for the two simultaneously loaded volumes. This enables clear differentiation between e.g. contrast-filled vessels, bones, stents, clips or coils.

Furthermore, it allows the display of one low-contrast and one high-contrast volume in one view, often realized as embedded MPR where the high-contrast volume is visualized in VRT and the soft-tissue information is shown **as MPR** slice. This can be used e.g. for visualization of the anatomical structure of tumors in combination with the feeding vessels.

3D roadmap

The operator can overlay any 3D volume or planning data, or excerpts of it, onto the live fluoro image. Via a Fade in — Fade out with the joystick the degree of visibility of the overlaid information can be determined at any time This tool offers the physician real-time three dimensional guidance for more confidence. It avoids repeated injection of contrast material during fluoroscopy by overlaying a 3D vessel tree instead. The 3D roadmap is automatically updated in real-time according to any table, C-arm, zoom and SID changes. Even changes due to patient movement can be manually updated.

The 3D volume can be overlaid on regular fluoro as well as on subtracted fluoro (Roadmap) or acquisition series. The overlay appears on the display of the syngo X Workplace so the 3D Roadmap information is available in parallel with the regular 2D images of the live display of the acquisition system.

Fusion functionality

A fused CT, MR or PET image can be overlaid with live fluoroscopy in combination with 3D roadmap functionality providing information during interventional procedures that are available neither in 2D X-ray nor in 3D rotational angiography.

The package includes 3D/3D Fusion, which allows to spatially align two 3D volumes from the same or different modality in such way that the anatomical structures overlay each other. Any *syngo* DynaCT or *syngo* Dyna3D image can be fused with datasets from e.g., CT, MR or **PET.**

For PURE systems only: this package contains also the following functionalities:

The package includes in addition 2D/3D Fusion, which allows to spatially align any pre-acquired 3D volume of the patient with two 2D X-ray projections. This eases the workflow during the procedures and reduces the X-ray dose because no additional 3D acquisition is required.

Workflow support for **needle-guidance**

Provides a menu guided intuitive 3 step approach for consistent needle positioning results:

Step 1:
Definition and check of the needle path on a DynaCT or an external CT or MR or **PET-CT** dataset.

Step 2:
Check of automatically proposed progression views that will be used for monitoring the needle procedure.

Step 3:
Alignment and progression of the needle under fluoro control while the planned needle path is overlaid on the live image of the acquisition system. Easy switch between **the defined** progression views to control the real needle position and direction in all three dimensions.

Subsequently, a control scan can be performed and automatically fused with the planning volume using fusion functionality. *syngo* DynaCT, CT, **PET** or MR images **are** accepted for the image fusion.

Registration Algorithms:

- easy-to-use visual alignment with 6 degrees of freedom (3x translation, 3x rotation)

  landmark based registration with convenient landmark editor for point-based registration using anatomical landmarks

- storage of transformation matrix with datasets after registration for later retrieval

Visualization Techniques:

- Side-by-side visualization of both datasets with correlated pointer and correlated scrolling with dog ears
- 2D fade in monochrome or pseudo-color with adjustable balance between the **two** superimposed data sets.

Workflow support for **embolization guidance**

Based on a contrast-enhanced DynaCT, CTA or **MRA, the actual catheter position as well as** the distal ends of the

Description

vessels feeding a lesion are marked and the navigation path is automatically calculated. The ability to graphically overlay this path with the current fluoroscopy image even offering a selection of different visualization options such as (centerline, outlines, 3D vessel representation) reduces the use of contrast material and lowers navigation time and hence total fluoroscopy dose during embolization procedures of e.g. tumor-feeding vessels.

As a second feature, segmentation and volume computation of a 3D structure such as a tumor nodule can be done based on CT, MR, PET-CT or late phase DynaCT volume datasets. The segmented object can also be overlaid with live fluoroscopy using the 3D roadmap functionality for improved orientation and target visualization during the intervention. The automatically computed volume can be used for estimation of the amount of (chemo-/radio-) embolic material needed.

For PURE systems only: toolbox functionality also included:

Toolbox is a generic application to interactively mark structures of interest in a 3D volume, e.g. a *syngo* DynaCT image, using points and lines. Analogously to *syngo* 3D Roadmap, these markings are projected onto the live 2D X-ray illustrating the position of the 3D anatomical structure within the live X-ray.

Included functionalities:

- Automatic extraction and overlay of anatomical outlines of the 3D volume on live 2D image.

- Overlay of any lines and dots drawn on the VRT or MPRs on live 2D image.

This functionality provides an easy link between information that may only be visible in the 3D volume (VRT or MPRs) and the fluoroscopy or roadmap images.

2D Image Manipulation

syngo Angio Viewer

The *syngo* Angio Viewer enables dynamic review of DSA scenes (in subtracted or native display) and their post-processing at the *syngo* Workplace, with functions such as:

- Remasking.

    Pixelshift.

- Anatomic background.

- Opacification etc.

    Review of DYNAVISION and PERIVISION scenes

syngo iFlow

syngo iFlow allows the visualization and analysis of blood flow and 2D perfusion in the examined organs. This information is based on the time-to-peak calculations from a routine DSA acquisition and can be applied as simple click-of-the button postprocessing to arbitrary pre-acquired DSA scenes. The calculations can be shown as a color-map of the whole organ. It is also possible to calculate blood flow and perfusion characteristics for regions defined by the user, and display them as ROI (region of interest) curves. These graphics support the analysis of blood flow dynamics in the defined region.

syngo Scene Compare

Dual monitor support for dynamic side-by-side comparison of two scenes or for the evaluation of bi-planar scans in synchronized mode. It can also be used to compare scans to single images In Interventional Oncology, this functionality can be used to compare pre- and post-interventional 2D scenes or iFlow images for evaluation of changes in blood flow characteristics as a result of the therapy.

Common functions

inroom control functionality

Allows for remote control of the *syngo* X-Workplace from the examination room via touchscreen and joystick mounted table-side or on a trolley.

For this, a set of functions is offered inroom for e.g. 3D image assessment and manipulation, 3D navigation, multimodality image integration, or for actively following the steps of a pre-defined workflow.

syngo Expert-i

syngo Expert-i enables the physician to interact with the syngo X Workplace from virtually anywhere.

When clinical questions arise at the *syngo X* Workplace, a second user with a Windows PC can quickly and efficiently access the *syngo* X Workplace via the network. He or she can assume full control of every application on the *syngo* X Workplace and can see all screen content that is displayed for the local user on the main monitor. This

Description

allows the parties involved to discuss clinical questions via phone and quickly reach solutions on a joint basis.

DICOM
Industrial standard for the transmission of information between DICOM-compatible units from different manufacturers. The scope of functions is described in detail in the DICOM Conformance Statement and in the standard version includes the Transmission/ Reception, Query/ Retrieve and Basic Print functions.

Note concerning DICOM interface(s)
For diagnostic purposes, only hardcopy cameras/laser printers explicitly approved for this system may be used.

The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s).

Functionalities across interfaces with/between partner systems require explicit validation, since the interpretation of the interface by the partner/target system is not part of the product's responsibility.

A modification of the interface that might be required is not included in the offer; e.g, for the rare case that available configurations are not sufficient. With regard to expenses for interface configurations that might be required, *the* agreements on maintenance/service of the product apply.

Input check for data consistency
3D series list function with consistency check of 3D series that are suitable for 3D processing. Overlapping 3D series can be merged to a single consistent 3D series.

Data set preparation
The data to be displayed can be limited through the clip box or the function "irregular volume of interest", which filters out disturbing information.

Image processing
Multi-Planar Reconstruction (MPR) for interactive movement through 3D volumes in any direction

> Real-time reconstruction of secondary cuts in orthogonal, oblique or double oblique orientation with freely selectable slice thickness (MPR thick, MPR thin) and slice distance.

–   Calculation of curved cuts is possible.

–   Automatic generation of parallel or radial areas.

–   Frequently used area settings can be stored.

–   Reference lines can be determined in the reference topogram or from a 3D surface reconstruction.

Maximum Intensity Projection (MIP) for angiographic display:

-   Projection of the pixels with the highest intensity (vascular information) on any plane for display and diagnosis of e.g. aneurysms, plaques, stenoses, vascular anomalies or vascular exits.

–   **Thin MIP function** for the projection within a slab of the data set.

> Automatic generation of radial areas. The resulting series can be viewed in three-dimensional display by means of the Movie function.

Shaded Surface Display (SSD) for the surface display of complex anatomies:

-   Three-dimensional display of surfaces from a series of adjacent slices by means of an adjustable threshold value with quick preview and high image quality mode. It is used to display and analyze different anatomies, such as the interior of the skull, pelvis, hips, etc. in order to plan surgical procedures

–   The 3D objects can be tilted and rotated on the monitor in real-time by means of a virtual trackball.

> Automatic generation of radial series of SSD displays.

Since MPR, MIP or SSD are different visualization filters of the same data set, the user is free to switch between these modes and can also magnify the current display segment. Reconstructed images or areas can be stored or transferred to film sheets.

The image series are created in the Peristepping or Perivision mode and combined to a native full-format image on the syngo Workplace.
The full-format images can be printed out on laser or paper printer. For diagnostic purposes only hardcopy

Description

cameras/laser printer expressly approved for this system may be used.

The lower body radiation protection can be attached to the accessory rails either on the right or on the left side of the patient positioning table.
It consists of the following shielding units:

- A basic unit shielding the area between accessory rails and the floor. It is flexible and can be adapted to the examiner's preferences.
- One LB radiation protection pivot swivel element that can move out of the way during collisions with the tube and still retain its protective function.
- Two clip-on units pointing upwards from the upper edge of the basic unit with a length of 57 cm and 27 cm.

The scattered radiation shielding units can be attached to the basic unit in an overlapping and fan-shaped way to allow closed, adapted scattered radiation protection even in the lower thorax area.
The maximum load of the accessory rails is 40 kg, the weight of the attached scattered radiation protection is 8 kg.

Radiation protection attached via a ceiling-mounted, mobile stand for protection against scattered radiation; incl. 4 m ceiling rail.

- Swivable and rotatable around the fixed point, range of rotation 360°.
- Counter-balanced, height-adjustable support arm.
- Acrylic glass with Pb equivalent of 0.5 eq (w x *h:* 61 cm x 76 cm), with recess for interventional examinations.

Mach LED 130F examination light with focusable light system. Can also be installed on the Portegra2 ceiling support of the portable radiation protection panel.
It is therefore fully integrated into the ceiling-installed radiation protection system of the Arts Zee/Q/Zen family.

- Luminance: 60,000 Lux for 100 cm distance
- Working distance: 70 to 140cm
- Color rendering index Ra: 95
- Color temperature: 4,300 Kelvin
- Focusable spot size: 14 to 25cm
- Diameter of light head: 33cm
- Number of LEDs: 19
- Total input power: 20 VA
- Max. reach of the spring arm combination: 185 cm
- Total weight of light head with grip sleeve: 2,4kg

Lamp power connection 230V or 115V possible

Communication *I* Intercom system for communication between examination room and control room, with additional footswitch for conversation selection in the examination room.
Microphone and control box on the console in the control room.
With adaptive acoustic filter for background noise suppression in the examination room
Microphone in the examination room installed on the ceiling.

Ordering information that can be deleted from the final version of the offer follows:
Intercom - Comfort replaces the old intercom system (without adaptive acoustic filter for background noise suppression).
Delivered as an option only, not included in the basic configuration

Description

The visco-elastic comfort mattress for narrow tabletop reacts to temperature and has the special property of adapting to the individual body shape under the influence of body weight and heat.

The insert with accessory rails attached to the right and left slides over the outer edges of the patient positioning tabletop.
It is locked in place through two screws on either side. The part to be inserted underneath the tabletop consists of radiolucent carbon fiber material, which avoids disturbing edges in the image.
Max. load capacity of the accessory rails: 40 kg.
Length of the accessory rails: 45 cm.

For Adis tabletops, the two arm holders help to laterally position the arms comfortably along the patient's body
They are slid laterally underneath the mattress, level with arms, and fixed by the patient's body weight.
The patient's arms can be immobilized with commercially available securing straps (not included). Two pairs of arm holders of different length and height (matching the mattress height) are supplied, that are suitable both for thick and thin mattresses.

An arm holder weighs 8 kg.

During interventions requiring the patient to be positioned on the tabletop in prone position, the head can comfortably be positioned on a head pad filled with soft gel material.
An oxygen tube can be inserted into the patient's mouth from the side.

Rail profile (short table attachment) for table operation
- Weight: 1.4 kg
- Rail length: 12 cm
- Width: 20 cm

Description

    Height: 14.5 cm

Rail profile (long table attachment) for device operation (with or without table operation)

- Weight: 2.8 kg
- Rail length: 25 cm
- Width: 20 cm
- Height: 14.5 cm

Note concerning DICOM interface(s)

For diagnostic purposes, only hardcopy cameras/laser printers explicitly approved for this system may be used:

The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s).

Functionalities across interfaces with/between partner systems require explicit validation, since the interpretation of the interface by the partner/target system is not part of the product's responsibility.

A modification of the interface that might be required is not included in the offer; e.g. for the rare case that available configurations are not sufficient.
With regard to expenses for interface configurations that might be required, the agreements on maintenance/service of the product apply.

Display mount

The longitudinally mobile, swiveling, rotating, and height adjustable display holder with extended working range contains a large color flat display.
All cables are integrated.
The double-articulated arm of the "extended working range" display holder provides greater flexibility and a greater positioning range for the Large Display.

Technical data for the display holder:

- Longitudinal travel range 315 cm.
- Height adjustment range 75 cm.
- Swivel range between the articulated joint and the suspension at the ceiling-mounted carriage ± 150 degrees_
- Swivel range between the freely-suspended cantilever arm and the articulated joint t 120 degrees.
  Display swivel range 330°.

The large display area allows for both large display and the free positioning of examination-relevant video signals. The fully integrated tableside control allows for selection from among twelve layout variants.

For the diagnostic color display in **TFT** technology, with high luminance and extended viewing angle, the gamma curve has been adapted particularly for gray scale display according to the
CIE / DICOM recommendation.

Video signals such as live, assist and reference images, *syngo* X Workplace, Sensis/recording systems, PACS, 1-ItS/RIS, ultrasound, ECG, external video, endoscope, mapping systems, system and table position, system messages and dose information can be individually positioned and displayed on the Large Display, if connected.

If the dual reference function is available, parallel static reference images are displayed on both reference monitors.

Technical specification for the 60" display

- Display size (W x H) 60 '', 133 cm x 74.8 cm
- Screen size 60 153 cm
- Resolution: 3840 x 2160 (pixels); 8 megapixels at 4 x HD.
- Color depth 16.7 10^5 colors.
- excellent brightness over the lifetime: 300 cd/m^2 at a contrast

Description

ratio of 4000:1.

–   Flicker-free and distortion-free image display.

Technical specification for the 55" display:

-    Display size (VV x H) 55 ", 121 cm x 68 cm .
-    Screen size   55 " 139 cm
-    Resolution: 3840 x 2160 (pixels); 8 megapixels at 4 x HD.
-    Color depth 1.07 10^9 colors.
-    excellent brightness over the lifetime: 350 cd/m^2 at a contrast ratio of 1450:1.
-    Flicker-free and distortion-free image display.

Technical specification for the 56" display:

-    Display size (W x H) at 56", 124.4 cm x 70 cm
-    Screen size at 56" (142.2 cm)
-    Resolution: 3840 x 2160 (pixels); 8 megapixels at 4 x HD.
-    Color depth 16.7 10^6 colors.
-    excellent brightness over the lifetime: 300 cd/m^2 at a contrast ratio of 800:1.
-    Flicker-free and distortion-free image display.

Bypass concept
In case of error, such as controller failure, the Large Display switches automatically to bypass mode and emergency fluoroscopy is displayed on the Large Display.

Backup concept
The Large Display has a backup concept to ensure against power supply failure (2 separate power supplies for the left and right sides of the Large Display).

Note: If a Large Display is selected, the Adis basic configuration includes a connection kit for the large display instead of the displays for the examination room.

The type of large display can be chosen with a separate position.

The Large Display video controller 18 receives various internal and external video signals for presentation to scale on the Large Display.
Up to 18 external and internal video sources can be connected (max. 14 DVI-D and 4 analog (VGA) channels).

Important images for diagnostic purposes can be displayed to scale in their original size on the Large Display. Less important, non-diagnostic information can be displayed at a reduced size by the interpolation algorithm for image information integrated in the video controller.

An enlarged or reduced display can be selected individually via the display configurations at the fully integrated tableside control. The video controller then takes over interpolation and adaptation of image size.

In waveform images with high resolution, such as for electrophysiological recording systems, the curves are displayed free of artifacts because of a special interpolation algorithm.

The Display is attached to the rear of the DCS Large Display.
Mounting brackets are already available.

Flat display in TFT technology with high luminance and extended viewing angle.

-    Screen size 19" (48 cm).
-    Resolution 1280 x 1024 (pixels).
-    Excellent brightness for the entire service life: 400 cd/m^2 at a contrast ratio of 1000:1.
-    Viewing angle (horizontal and vertical) 176 degrees.
-    Flicker-free and distortion-free image display.

Description

Ambient light sensor for optimum adaptation of the image display to the room brightness.

Large color flat display

The IPS panel technology combined with the large display area represents a new dimension in medical image display.
This technology combines high luminance and high contrast, consistent for all viewing angles. It provides an incomparable image impression especially for gray scale images.

For the diagnostic color display in TFT technology, with high luminance and extended viewing angle, the gamma curve has been adapted particularly for gray scale display according to the CIE / DICOM recommendation.

Technical specification for the 55" display:
Display size (W x H) 55 ", 121 cm x 68 cm .
Screen size 55 ", 139 cm
Resolution: 3840 x 2160 (pixels); 8 megapixels at 4 x HD.
Color depth 1.07 10^9 colors,
excellent brightness over the lifetime: 400 cd/m^2 at a contrast ratio of 1450:1.
Flicker-free and distortion-free image display.

Backup concept
The Large Display has a backup concept to ensure against power supply failure (2 separate power supplies for the left and right sides of the Large Display).

Flat display in TFT technology:
– Screen size 19" (48 cm).

   Resolution: 1280 x 1024 (pixels).

   Excellent brightness for the entire service life: 400 cd/m^2 at a
   contrast ratio of 1000:1.
– Flicker-free and distortion-free image display.
– Ambient light sensor for optimum adaptation of the image display to the room brightness.

This UPS is recommended when protection and uninterruptible power is required for the C-arm and table Emergency fluoroscopy is not available with this UPS. If emergency fluoroscopy is required. the 9390 - 160 kVA UPS is recommended for the full system. One UPS per lab.

Operation:
- Since this UPS is working completely uninterrupted   a power failure is observed when no radiation is available and the display shows No X-ray please wait".

   The Emergency power lamp (red) will light on the power display during a power failure. All stand movements are possible and the image system functions are protected against data loss. Guaranteed back up time: 10 min.

– Restoring of hospital's main power supply is indicated when the generator boots again (also green Hospital power lamp lights). Full exposures are available after apx. 75 seconds.

Includes UPS, battery, maintenance bypass panel, and one year on-site parts and labor coverage (24x7) by Eaton Powerware.

Additional seismic brackets are required to make this system OSHPD approved.

NT60010835 Interstate Mat Corporation Anti-fatigue Mat

Description

Industrial-grade anti-fatigue floor mat that provides comfort and durability. As ahigh-quality product designed to fight fatigue, it provides support for tired, aching feet, legs and back. Beveled edges for safety. Size 3'x5'.

- ±15° head up/head down positioning.
  Iso-tilt functionality for maintaining the projection during table tilt along the patient axis.
- Motorized, power-dependent table movement in longitudinal direction when the table is tilted (power-assisted control).
- Electromechanical release of table swivel at the touch of a table button.
- Max. patient weight 200 kg. It is possible to install up to 40 kg of additional accessories.

Scientific measuring program for objective, accurate and reproducible vessel evaluation:

- Automated contour detection.
- Determination of degree of stenosis,
- Automatic and manual reference diameter determination.
- Automatic and manual calibration methods.
- Distance and angle measurement.

Especially to be used for vessel sizes between 0.5 mm and 50 mm.

The visco-elastic comfort mattress for narrow tabletop reacts to temperature and has the special property of adapting to the individual body shape under the influence of body weight and heat.

The insert with accessory rails attached to the right and left slides over the outer edges of the patient positioning tabletop.
It is locked in place through two screws on either side. The part to be inserted underneath the tabletop consists of radiolucent carbon fiber material, which avoids disturbing edges in the image.
Max. load capacity of the accessory rails: 40 kg.
Length of the accessory rails: 47 cm.

Ordering information that can be deleted from the final version of the offer follows:
For narrow tabletops.
Not to be used in conjunction with head holder.
Not in conjunction with the Surgery *table.*
Delivered as an option only, not included in the basic configuration.

Cable connection to the OEM measurement system for ECG triggering. Necessary requirement for ECG-triggered Dyna CT card and for ECG triggered fluoroscopy.

The RaySafe i2 package enables continuous improvement of working procedures in X-ray environments by providing staff with personal, real-time information about scattered X-ray dose.

- The Real-Time Display enables immediate changes in working procedures in order to minimize dose
- The Personal Dosimeters supply the Real-Time Display with information about each individual's personal dose
- The Dose View software makes it easy to review radiation data.
- The optional Dose Manager software makes it easy to report, export and archive radiation data

The RaySafe i2 system includes:

Description

- 1 x RaySafe i2 Real-Time Display
- 4 x RaySafe i2 Dosimeters
- 1 x Dose View software package
- 1 x RaySafe i2 Cradle
- 1 x RaySafe i2 Mounting Rack
- Installation and a one (1) year warranty provided by Unfors

Optional Accessories
Additional RaySafe i2 Dosimeter Order No. AS10655940
RaySafe Dose Manager software package Order **No. AS10655941**

Technical specifications :

Dosimeter
Weight 30 g (1.06 ounces)
Operational quantity   Hp(10)
X-ray dose range 1 pSv — 10 pSv
X-ray dose resolution   1 pSv
X-ray dose uncertainty   5% or 1 pSv
X-ray dose rate range and linearity   +/- 10% 40 pSv/h — 150 mSv/h +/- 20% 150 rnSv/h — 300 mSv/h
Energy dependence   X-, y-rays N40 — N100 (33keV — 84keV)
                                              N100 — N120 (84keV 101keV)
Average battery life 3 5 years, depending on daily use

Real-Time Display
Dimensions   30 x 25 x 6 cm (w x h x d) / 11.8 x 9.8 x 2.4 inch
Weight   1.45 kg (51.15 ounces)
Display 10.4 " touch screen
Resolution   640 x 480 pixels
Storage   All X-ray dose ratels and accumulated dose/h that are received
                                                    from dosimeters in range. The memory size accommodates
                                                    f.i250 dosimeters **with 50** h X-ray dose rate history each.
Communication   Wireless radio communication with dosimeters
Ethernet 10/100 Mbit/s port for the Dose Manager connection

Dose Manager PC requirements
Operation System Windows XP or Vista
System memory At least 2 **GB**
Hard disk   **40 GB with at least 15 GB** available space
                                                    USB 2.0 port

Dose View PC requirements
Operation System Windows XP or Vista
System memory   At least 1 **GB**
USB 2.0 port